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Flying the flag for Morse

Morsum Magnificat

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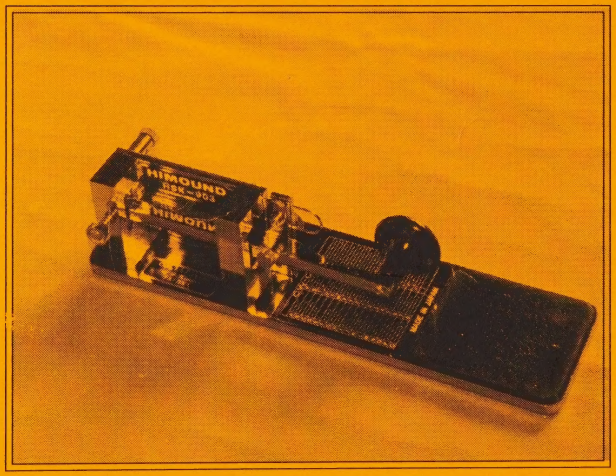
The Morse Magazine



Hi-Mound HSK-903 Side Movement Key

Flying the flag for Morse

Morsum Magnificat

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MORSUM MAGNIFICAT was first published as a quarterly magazine in Holland, in 1983, by the late Rinus Hellemons PA0BFN. It has been produced four, then six times a year in Britain since 1986, and up to January 1999 was published and edited by Tony Smith, G4FAI and Geoff Arnold, G3GSR. It aims to provide international coverage of all aspects of Morse telegraphy, past present and future. MORSUM MAGNIFICAT is for all Morse enthusiasts, amateur or professional, active or retired. It brings together material which would otherwise be lost to posterity, providing an invaluable source of interest, reference and record relating to the traditions and practice of Morse.

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FRONT COVER

Hi-Mound model number HSK-903 which operates with a side movement. The Morse code alphabet is printed on the base.

Photo/Collection: Heisuke Kimura, JA1DVV

Comment

A Very Happy Millennium to all readers. This has to be a good year for Morse, after all, what is good for Morse is great for Morsum Magnificat - and in Roman numerals this is year MM!

The new millennium starts with Morse now no longer a mainstream mode of communication for commercial users in many parts of the world. Specialist applications will continue to develop and the work of The Morse 2000 Outreach, Department of Communication Disabilities at the University of Wisconsin-Eau Claire is a fine example of this. I am sure that Samuel Morse would have been pleased to learn that his code had been extended to cover all the keys on a computer keyboard for people unable to use them.

As regards other areas of interest associated with Morse, newcomers to Morse on the radio amateur bands or the internet will be those drawn by the fascination of communicating with dots and dashes. The growth of interest in collecting and restoring telegraph instruments of all types is self-evident by their increasing prices and I suspect that more old telegraph systems will be revived to the delight of the enthusiasts and tourists alike. As wire and wireless telegraph systems become distant objects of history, it is almost inevitable that the study of their technology and effect on social, economic and political history will increase.

MM will continue to fulfil its role, currently unique among publications, as the international magazine devoted to Morse and the telegraphs.

Apology. Due to error in printing the labels for MM66, the words 'LAST ISSUE' appeared in the top left hand corner giving the impression that this was the last copy that you would receive. There should have been a number printed next to these words to inform you of the issue number at which your subscription expired. This number did not appear - my apologies for the confusion that this created.

Zyg Nilski G3OKD

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News

DARC's Opposition to Morse Hardens

The November 1999 issue of "CQDL" the journal of DARC (Deutscher Amateur Radio Club) reports that much of the controversial "Timm Report" was apparently put on the agenda of the Lillehammer IARU Region 1 Conference, despite announcements to the contrary from officials of DARC before the conference (See MM66 'DARC Not Opposing Morse').

Members of the German delegation were reported to have said that there was considerable discussion on the content and tone of the paper presented. The British, in an interview with G3HCT, and some others, were opposed to the DARC proposal to get a formal decision on the Morse exam issue at this stage. This resulted in the paper being disregarded.

Mr. Voegele, DK9HU, head of DARC, and even more so Mr. Koenig, DJ8CY, member of the DARC delegation, freely admitted in their interview for 'CQDL' that the rejection of the paper was obviously caused by its demanding content. However, DK9HU and DARC regard the submission of the paper to be a partial success by raising the issue of not retaining the Morse code exams in future. Strong opposition came from the Irish delegation whose members firmly expressed their disapproval.

It appears that as result of the Lillehammer Conference, DARC can no longer be regarded to be a firm supporter of the Morse code exam in the belief that its abolition will increase DARC membership, though some other German delegates were reported as giving pro-Morse exam statements later on.

(Report: Martin Hengemuehle, Chairman, Deutscher Telegrafie Club)

Rare DX Stations to Listen For

MM readers who are also radio hams may be interested in listening for the following DX stations:

MONACO, 3A. 3A/VA3EU has been QRV on 10108 khz between 0300 and 0430z. QSL to home call.

TUNISIA, 3V. Hrane, YT1AD, has been QRV from club station 3V8BB on 28023 khz from 1530 to 1630z. QSL via YT1AD.

VIETNAM, 3W. Members of the Tallinn Youth Radio Club will be QRV

as 3W6KM from December 5 to January 4, 2000. Activity will be on all bands and modes. QSL via ES1AKM.

BURUNDI, 9U. Gus, 9U5D, has been QRV on CW on 14035 khz starting around 0430z. QSL via SM0BFJ.

PANAMA, HP. Radio amateurs here can use the prefix 3F until January 5, 2000, in commemoration of the transfer of the Panama Canal. Look for 3F1AC, for example, to be QRV on all bands using CW. QSL via HP1AC

SOUTH SHETLAND ISLANDS. Danny, LZ2UU, will be active as LZ0A from the Bulgarian Antarctic base on Livingston Island from December 4 to February, 2000. QSL via LZ1KDP.

ANTARCTICA. Look for Niall, VP8NJS, to be QRV until February 1, 2000, and Art, KC4/KL7RL, to be active from Antarctic Base Patriot Hills. QSL via operator's instructions.
(Information: Ed Tanton N4XY)

Vintage Equipment Fraud Convicted

A Florida ham has been ordered to spend most of the next five years in prison after pleading no contest to fraud charges involving offers to sell amateur and vintage gear. Michael T. Kirby, W5JBV (ex-K4VFY), of Panama City, Florida, had been arrested August 20 for scheming to defraud using the US mails. Kirby has a history of arrests and convictions for allegedly accepting payments for equipment he never delivered.

Panama City Police Detective Robert Luther said that Kirby pled no contest on September 30 in Bay County Florida 14th Judicial Court, "which means he puts himself on the mercy of the court," Luther explained. Kirby will get 41 days credit for time served in the Bay County Jail following his arrest.

Luther said Kirby's fraudulent dealings were extensive. He said that while Kirby actually received somewhat less than $20,000 in proceeds from his fraudulent dealings, "the attempted fraud is well greater than that."

The court required Kirby to make restitution "to as many victims as I can identify," Luther said. Some victims already have received refunds. Luther said those defrauded by Kirby who have not already received a refund or been in contact with authorities should send him "original proof" that fraud occurred. He said this means original documentation, letters, correspondence and similar material as well as the amount of money and the dates involved.

Those believing they were victimized by Kirby can e-mail Luther for more information at panamaone@aol.com or call him at 850-872-3129.
(From QST, December 1999)
(At least one MM reader has been offered a rare key for his collection by this person but discontinued the transaction after he became suspicious. Apparently victims included overseas collectors. If you think that you have a claim contact Det. Luther - Ed)

Swedish Alexanderson Transmitter to Live Again

The very last known working 17.2 kHz Alexanderson transmitter in the world will be on the air on January 1st and 2nd 2000 from SAQ, Grimeton on the Swedish West coast. Transmission times are 12.00 and 12.30 and 1300 UTC on January 1st and 0600 UTC on the 2nd. A number of these antique transmitters were built in the twenties and constructed in the USA by the Swedish-born Ernst Alexanderson.

High power radio frequency (VLF) output was generated by alternators which enabled reliable communication all over the globe and could be heard by submarines under water.

The antenna is a couple of kilometres long on high towers. This fantastic station is now a museum and visitors are welcome. Hans Goldschmidt, SM5KI says, "Our club was there a couple of years ago and I had a chance to send vvv..... I will never forget the v-sounds of the generator along with my keying on the old CW key!! If you remember the old Frankenstein Monster Movies, then you can imagine what it looked like with those big handles and switches. Also the tuning rods going up and down in water while the transmitter was tuned up"

QSL-cards will be returned for reports received. Listening to SAQ will be a sound of radio history but a VLF receiver is needed capable of tuning to 17.2 kHz.

(Information Hans Goldschmidt, SM5KI)
See also the article on page 6 - Ed

RSGB Seeks Members Views on Morse Sub-bands

As part of the consultation phase on new A/B licence proposals, the Radio Society of Great Britain (RSGB) is inviting members to submit their comments on future band planning which might be included in BR68, the Radiocommunications Agency's Licence schedule. Strong and diverse views are held by members on whether band segments for using Morse should be protected on specified frequencies.

There is a concern that if access to the HF bands did not require a Morse qualification then the increasing number of users would encroach on the Morse sections of the bands under the voluntary band plan scheme. Apparently the Radiocommunications Agency has informed the RSGB that "the Agency recognises the importance of Morse code as a communication mode. It is therefore prepared to consider amending the licence schedule to set aside certain parts of the HF bands for Morse only"

"The Society sees three option for the way ahead:

- Firstly, to do nothing. We have existed for many years with a 'gentlemen's agreement' on band planning at HF and this could continue.
- Secondly, include a comment in the BR68 schedule that the 'IARU Region 1 band plans should be respected'. This would give additional force to the gentlemen's

agreement.

- Thirdly, by specific definition in BR68, to limit telephony stations to the existing telephony sections of the bands, as defined in the relevant IARU band plan. For most of us, this would represent no change."

New Morse 2000 Bibliography

The Morse 2000 Outreach, promoting research in the use of Morse code in rehabilitation and research at the University of Wisconsin-Eau Claire has recently announced that the current revised Morse 2000 bibliography of research and clinical experience with Morse code over the past 160+ years is now available free on their web site at: http://www.uwec.edu/Academic/Outreach/Morse2000/morse2000.html

It is also available by postal mail but please enclose a self-addressed envelope with three units of first class postage for the USA (more for other countries). 'Additional donations are always welcome!' The address is: Morse 2000 Outreach, Human Sciences & Services Outreach Office, University of Wisconsin-Eau Claire, Eau Claire, WI-54702-4004, USA.

Morse Code "I Love You"

Whilst some think that the world is losing interest in Morse, others realise how deeply it is embedded in the culture of the modern world - and are making a business of it!

Diamond Jewelry, Inc., California advertise their LOVECODES Bracelets on the internet. They say, 'You may have said it every other way, but saying "I Love You" in Morse Code will send the message clear to the heart!'

They offer a range of bracelets

which spell out "I Love You" in Morse code using 'round brilliant' (dots) and 'baguette' (dashes) cut diamonds, totalling 2.25 carats. The bracelets are available in gold at $4800, white gold at $4900 or platinum at $5500.

Visit their web site at http://www.lovelines.com/shop/codes.html or phone 1-800-275-4354

As with all internet purchases, make sure that you have the terrestial name and address before purchase.

SAQ Grimeton Radio The Link to America

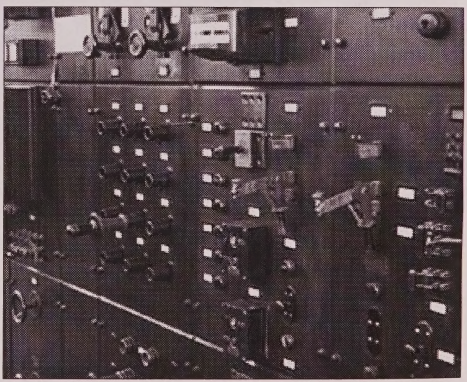
Edited by MM from the Grimeton Radio Web Page

GRIMETON, ON THE WEST coast of Sweden is the site of the last complete and working Alexanderson transmitter. It is now a 'Listed Historic Establishment', open to visitors and on special occasions, goes on the air.

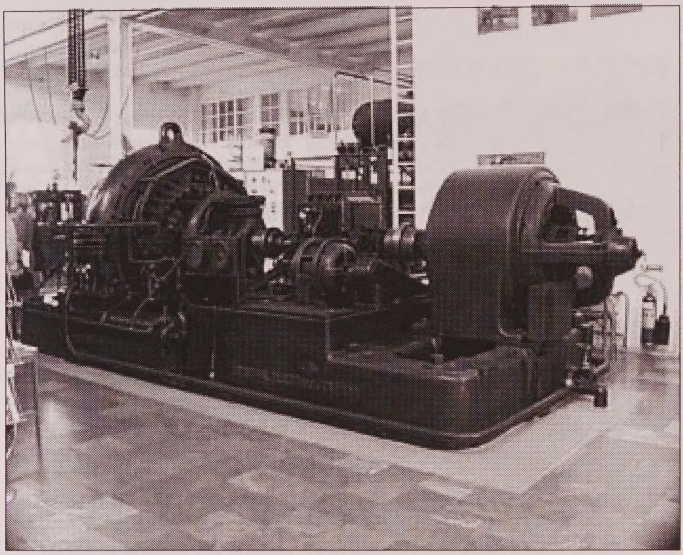
In 1895 the Italian physicist and later Nobel Prize winner Guglielmo Marconi (1874-1937) had realized the potential of wireless telegraphy, i.e. the possibility of transmitting information with the help of radio waves.

The experiences from World War I showed that the communication across the Atlantic did not function well and the demand for increased telegram traffic to America was great. The Swedish Parliament, *Riksdag* therefore decided, in 1920, that a long wave transmitting and receiving station should be built by the then Telegrafverket.

It was decided that the location of the establishment should provide an entire wave propagation path to the receiving station in New York across open waters - south of Norway, north of Denmark and Scotland. Grimeton, a village about 10 kilometres east of Varberg, was therefore considered a suitable choice. The open landscapes around the site left the way free for the



Control Panel of the Alexanderson transmitter



The Grimeton Alexanderson transmitter built by General Electric, USA, installed in1924.

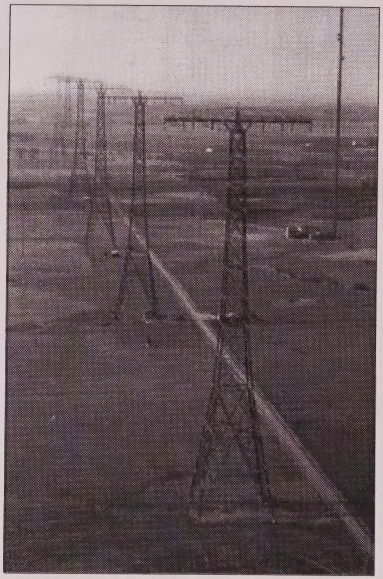
radio waves out towards the Western Sea and, besides, the name of Grimeton was eassy to pronounce for Americans. The "great radio station", as it was called, was then built during the years 1922-24.

The transmitter, the heart of which is an alternating-current generator (alternator), was developed by the Swedish-born engineer Ernst Alexanderson (1878-1975) who was a pioneer in radio engineering, educated in Europe, employed at General Electric in Schenectady outside New York and later on chief engineer at Radio Corporation of America (RCA).

By the autumn of 1923 the establishment, except for the six antenna masts, was ready. Construction of the masts was delayed by a general strike at the Swedish ironworks. They were therefore built in 1924 as the final part of the installation. The six 127 meter high masts are still there. The masts were placed at intervals of 380 meters and 46 meter long cross-arms were attached to carry the 12 wires feeding energy into the six vertical radiating elements.

For certain employees a little village with dwelling-houses for seven families was built.

On December 1, 1924, the traffic of the 'great radio station', Grimeton



Grimeton's 1.9 kilometer antenna system, still there today.

started on 16.7 kHz (wavelength 18,000 meters) with the call-sign SAQ. In the summer of 1925 the formal inauguration by King Gustav V took place. He had travelled by car from Varberg railway station with, among others, the constructor Ernst Alexanderson.

The Swedish receiving station for transatlantic wireless telegraphy was built in Kungsbacka. Both the transmitting station in Grimeton and the receiving station were connected to the Göteborg Telegraph Station where incoming and outgoing telegrams were dispatched. During the war years, 1939-45, telegraph cables were cut and the Grimeton station was Sweden's main communication link with other countries.

Of the some twenty 200-kilowatt Alexanderson transmitters which were built in USA by General Electric and installed all over the world, only this one at Grimeton remains. Grimeton is unique. Almost everything is in its original state as it was built in the 1920s. Besides the transmitter, still possible to run, the visitor can find the well-preserved buildings, the antenna, unique in the world and the little "radio village".

The Vänföreningen Alexander (Friends of Alexander), support group of the station, founded by earlier employees at the radio station and other persons interested in Grimeton, devote themselves to keeping and bringing to life the old techniques. Through study circles and working groups, skills to attend and run transmitters and machinery are being developed and passed on to others.

In co-operation with the Varberg Tourist Office the station is open to the public during the summer and to groups at other times by agreement. Members of the Vänföreningen Alexander are in charge of arrangements for tour-guides and service.

(Edited by MM from web information and pictures by kind permission of Henric Nilsson, Grimeton Radio Station, Telia Mobile, pl 3118, S-430 16 Rolfstorp,Sweden. Tel: +46 340 674251 http://telemuseum.se/Grimeton/grimeen.html)For more on the Alexanderson alternator see MM28 p40 ***MM***

Developing a Morse Input Standard

by Jim Lynds

(President, WesTest Engineering, Bountiful, UT, USA)

WHEN OUR COMPANY developed its first Morse Code based computer access product, we were surprised to learn that a standard code did not exist. Old Samuel Morse's code only covers letters, numbers and a few punctuation marks. We had to develop our own codes for things like mouse control and keyboard keys like Home, Escape and Delete. The lack of a standard for Morse Code Access has resulted in each manufacturer assigning different codes to keyboard and mouse functions. This makes it very difficult for a user to move from one system to another. No one wants to learn a new code set.

A standards committee was formed at the Morse 2000 conference to address this issue. The committee worked on developing a standard for more than a year. They met via the internet, using e-mail to exchange information and viewpoints. The committee tried to address as many issues as possible and a set of recommendations was developed. Some of the more important recommendations are listed below.

- Standard International Morse Code should be used for the letters and numbers even though a more efficient code could be developed.
- Codes should be designed so they are easy to use even if it makes them more difficult to remember (codes should be as short as possible).
- Codes should be assigned to keyboard keys so that a single code set could be used for both U.S. and International keyboards.
- The user should be provided with the ability to develop custom code sets to meet their individual language and usage needs.
- A mouse mode should be provided that allows the short codes used for letters (e, t, i, etc.) to be used to efficiently control mouse movement.
- A number mode should be provided that allows the short codes normally used for letters to be used to efficiently enter numbers.

A code set was developed that incorporates all of the recommendations. This code set became part of a standard that can be used to control the development of a Morse Code Computer Access capability. In addition to the code, the standard addresses such issues as input methods, operation, timing,

feedback, macros and code set generation.

The standard has been given to the Accessibility and Disabilities Group at Microsoft. Microsoft has expressed an interest in providing Morse access capability in Windows 2000. Let's hope they do. No one should have to pay $500 to $1000 to have Morse access to a computer. If you would like a copy of the standard, e-mail me at jim@westest.com. I'll be happy to send it to you.

(Reprinted, with the author's consent, from *MORSELS*, Summer 1999, Newsletter of the Morse 2000 Worldwide Outreach which promotes research in and use of Morse code in rehabilitation and education. The Morse 2000 web site is at http://www.uwec.edu/Academic/Outreach/Morse2000/morse2000.html).

Extracts from the Standard

The full document is too lengthy to reproduce here, but the following extracts will give some idea of what has been proposed by the standards committee. Titled, "Development Specification, Morse Code Input System for the Windows 2000 Operating System", the standard has been prepared by Jim Lynds on behalf of the committee and is dated April 22, 1999.

1.0 Scope

This document provides the development specifications for a set of application programs that provide a Morse code input capability for computers using the Windows 2000 Operating System.

1.1 background

Many people with physical disabilities are not able to use a computer keyboard or mouse. This severely limits their access to the educational, recreational and career opportunities provided by computer technology. Morse code has long been recognized as an effective computer access method for people who are not able to use a keyboard or mouse.

Morse code systems use a binary input method that represents characters and commands as a series of dots and dashes. For example, a dot followed by a dash indicates the letter a, a dash followed by three dots represents b, etc. If a single switch is used for entering the code, a dash is differentiated from a dot by activating the switch for a longer period of time. In two-switch Morse code, one switch is used for entering dots while the other is used for dashes. Three-switch input is also available for people who can not reliably control their movements. A variety of switches are available and most people can use Morse code, no matter what their disability. Morse code is quite efficient. Speeds of 15 to 30 words a minute are common and speeds in excess of 60 words per minute can be attained.

Morse code has a number of advantages over other alternate computer access strategies. It is usually faster, requires less fine motor control and is less likely to produce fatigue than other methods. Perhaps its most important advantage is its ability to become a sub-cognitive process. After using the code for a period of time, the Morse code user no longer thinks about the code they're entering. This is the same process as is used by touch typists and it has a significant impact on speed, accuracy and the quality of the work being produced. Morse code is the only alternate access method that can become a sub-

cognitive process....

Some Rules -

Some rules must be followed when developing code sets. Keys that output printable characters (letters, numbers, punctuation, etc.) are defined by entering the character. Keys that do not output printable characters are defined by entering the name of the key enclosed within <> symbols. For example, the enter key is defined by placing <ent> in the code and the F1 key by using <f1>.

Appendix

Default Code Set

Table 1 contains the default code set. This code set is loaded on boot up. While it has been defined for US keyboards, it possesses the capability of controlling computers that use other keyboards. The code set contains the two keys found on European keyboards that are not on the US keyboard (42 and 45). Since all codes have been assigned to keys or key combinations, computers using non US keyboard can be controlled by substituting the name found on the non US keyboard. For example, the Alternate Character key on many European keyboards is the same as the Right Ctrl key on a US keyboard. Entering the code for Right Ctrl would have the same effect as pressing the Alternate Character key.

Some of the codes in Table 1 are the equivalent of multiple key inputs. For example, the $ symbol is the equivalent of a shift 4, the % is the equivalent of a shift 5, etc. It is anticipated that code sets for non-US keyboards would define codes for multiple key inputs that use the alternate character key.

EXAMPLES FROM TABLE 1
DEFAULT CODE SET
(Total list has 126 symbols)

Keyboard	Code
<enter>	- — - —
<space>	- - — —
<backspace>	— — — —
<esc>	- - — - -
<end>	— - — - -
<del>	— - - — -
mouse mode	— — - — -
<underline>	- - — — -
<tab>	— - — — -
Number Mode	— — - - —
<insert>	- — - - —
shift>	- - — - —
<ctrl>	— - — - —
<alt>	- — - — —
<break>	— — — - - -
<num lock>	— - - — - -
<tab left>	— — - — - -
<up arrow>	— — — — - -
<home>	- - - - — -
<caps lock>	- - — - — -
<page down>	— — — - — -
<right arrow>	— — — — — -
<print screen>	— - - - - —
<pause>	- — — - - —
<page up>	— — — - - —
<scroll lock>	- - - — - —
<right ctrl>	— — - — - —
<right alt>	- - — — - —
<sys rq>	— - — — - —
<right shift>	- — — — - —
<left arrow>	— — — — - —
F1	- - — — — —
F10	- — — — — —
<down arrow>	— — — — — —

TABLE 2
MOUSE MODE

Mouse Action	Code
stop	-
accelerate	—
move right	-
move left	—

Table 2 - continued

move up	- -
move down	— —
move click left	— -
move click right	- —
move dbl click left	— — -
move dbl click right	- - —
move clk hld left	— — —
move clk hld right	- - -
move up left	- - — —
move up right	- - - -
move down left	— — — —
move down right	— — - -
wheel	— — — —

TABLE 3
NUMBER MODE

Keypad Output	Code
1	-
2	—
3	- —
4	- -
5	— -
6	— —
7	- — —
8	- - —
9	- - -
0	— - -
+	— — -
*	— — —
/	— - —
-	- — -
enter	- — - —
.	- — - — - —

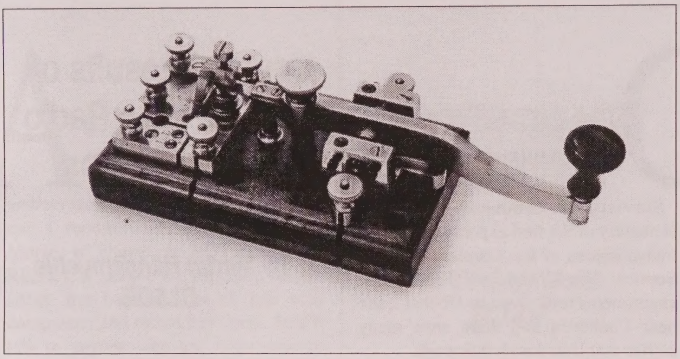
Parentage of the Ericsson Keys

by Jan Moller, K6FM

IN THE DAYS OF CAMELBACK keys, with their hard point contacts and stiff levers, sending fast for hours became hard work. Some telegraphers developed a soreness in the sending hand, "Glass Arm", that impaired their work. Henric Öller in Sweden came up with a telegraphic key design, patented in 1857, that gave a softer and bouncier feel to the keying.

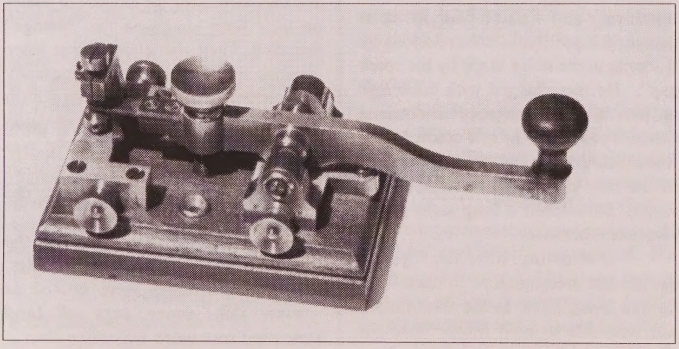
In addition to improved bearings, his key arm had at the end a leaf spring insert with silver contacts. This steel spring moved between two solid brass blocks that held the fixed contacts. Its flexing softened the action. In his longer model, Öller could connect the MAKE contact block to two different sending batteries by insertion of a conical brass pin. A shorter model did not have this feature.

Öller founded a company in 1859 for the production of "telegraph apparatus, electric bells and terapheutic devices" and made these keys. One of his employees was Lars Magnus Ericsson, who worked there for several years in the period between 1866 and 1876. The latter year Ericsson started a small factory that is now the world size communications corporation which still bears his name.



Original Öller key circa 1860

After Öller's death his company went out of business in 1891 but L.M.Ericsson continued to make heavy brass telegraph keys (among other things) to Öller's design well into World War II. The postwar "Swedish Key" was a simplified wartime development by a different company but still included the flexible spring steel end contacts, as do many other key makers. The Marconi P.S.213A key shown in MM62, p.41, is another example. ***MM***



Shorter Öller-Ericsson key, vintage 1936. Made by L. M. Ericsson

Unusual Results of Early German Radio Transmissions

by Martin Hengemuehle DL5QE

DEUTSCHER WETTERDIENST (The German Meteorological Service) is commemorating the centenary of the first experimental radio transmissions of the German Maritime Service. (See MM66, p8). The original experiments took place in 1899 at a site near Cuxhaven and there were many stories associated with this work.

They were using mighty spark gap transmitters and the newspapers of those days, more than once, claimed that the range of the transmitters using electromagnetic waves was sometimes shorter than the acoustic range of the noise from the spark gap when the transmitters were keyed!

Another report described police action taken against an individual resident who apparently tried to "listen intensively and with obvious intent to decode the non-public transmissions by listening to the noise made by the spark gap". He was charged with espionage but later released when proof was obtained that he was a retired former-soldier of the Kaiserliche Marine and was just interested in the new developments. Perhaps he would have faced a long term prison sentence otherwise.

Following this, the police carried out investigations to check that no one living close to the transmitting site was able to read Morse code. At times I guess there were more men from the secret police around than residents whenever transmissions were made. Later on military messages were encrypted.

After the first series of transmissions and range tests, the local farmers took out a law-suit, charging the Kaiser's government, i.e. the owner of the transmitter, with running the station and thus increasing the amount of stones on their farm land with the "strange" radiation. They also claimed that since the transmissions had started an unusually high number of calves were dying at birth and they were claiming compensation payments. In the end the dispute was settled. The farmers withdrew their allegations, but the reason why they did do so has never been revealed.

Mysteriously though, when the transmitting site was enlarged later, government sources were quoted as saying that every acre of land purchased was more expensive than it would have been for land in the centre of the capital, Berlin! *MM*

More Morse with Computers

by Dr Gary Bold
ZL1AN

ABOUT ONCE A WEEK somebody contacts me to ask about software for sending and/or reading Morse by computer. What can I recommend? Computer-aided Morse, of course, is NOT something REAL CW people are supposed to talk about. But I spend a lot of time with computers, and rather like them. So I'll talk to anyone who can communicate with me on CW using anything at all, as long as I can read their Morse, and they can read mine.

Sometimes a two-way computer-Morse QSO with a dedicated SSB or digital mode op can result in a complete change of attitude to those of us who converse in beeps (which they think of as pre-historic grunts) at the bottom of the bands. Sometimes, too, people just want to show the XYL or the family what these strange sounds they love are saying.

I have said it before, and I'll say it again - far from being a threat, the internet is a great plus for Hamming. Murray, ZL1BPU, recently passed on an e-mail from a European Ham drawing our attention to yet another couple of shareware Morse computer programs developed by Sergei, UA9OSV. I downloaded them immediately from http://ua9osv.da.ru and have been using them ever since.

Don't hesitate. If you have a Win95/98 computer with soundcard, try these. They're sufficiently impressive that I've postponed further work on similar software I've been developing myself. (Note: These programs are both up to version 15 at the time of revisiting this article for MM, October 1999, and the original BREAK-IN text has been modified to reflect improvements)

CwGET

This is the name of Sergei's code reader. It's written in C++ builder, and Sergei's help file says he has only tested it on a high end computer, but it runs fine on my 166 MHz Win98 machine. CwGet accepts input from the phone jack straight into the computer's soundcard. No interface is required. The audio gain is very non-critical. I unzipped it, fired it up, plugged it in, and it started decoding.

It's a true Win95/98 application. All the windows can be resized and

shifted. The screen appears as in fig. 1, which shows part of a three-way 80 metre QSO between Bruce, ZL1ADF, Jon, ZL1JON, and me. The decoded text in the middle screen shows Bruce exhorting Jon to contact me for a keyboard sender. The band is not particularly noisy, and computer copy is pretty good as Bruce's signal was very strong, and he sends excellent Morse.

You can see that only a few letters are corrupted. Most signals you'll copy on crash-infested 80 metres will not be as clean as this - all code readers work better on 20 metres and up, where the static is less. At the end, where Bruce passes it to me, you'll see some random characters between overs before the software picked me up and began to decode what I was sending.

CwGET Attempts to Do Everything For You.

The top window is a continuously updated spectrogram display which runs from 0 - 2500 Hz. You can see the fuzzy peak which is Bruce's signal overlaid with a vertical line indicating the frequency CwGET is tracking. I have told it to track the strongest signal in its receiving bandwidth by pressing the "AFC" and "AutoGTM" (Auto go to Max) buttons. The acquisition bandwidth is set with the "up/down" buttons, and I have selected the narrowest of the three supplied filters.

Incidentally, like other programs that read through the soundcard, the bandwidth of your receiver doesn't matter much. Sergei has implemented software bandpass filters - in his case Bessel 16

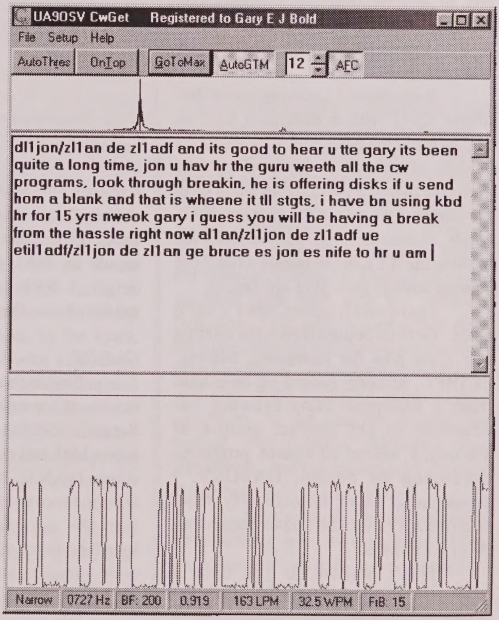

UA9OSV CwGet Registered to Gary E J Bold
File Setup Help
AutoThres OnTop GoToMax AutoGTM 12 AFC
dl1jon/zl1an de zl1adf and its good to hear u tte gary its been quite a long time, jon u hav hr the guru weeth all the cw programs, look through breakin, he is offering disks if u send hom a blank and that is wheene it tll stgts, i have bn using kbd hr for 15 yrs nweok gary i guess you will be having a break from the hassle right now all an/zl1jon de zl1adf ue etil1adf/zl1jon de zl1an ge bruce es jon es nife to hr u am
Narrow 0727 Hz BF: 200 0.919 163 LPM 32.5 WPM FiB 15

Figure 1 - An Example of a CwGET Screen

pole types - which automatically centre themselves on the frequency of the incoming signal.

The text is decoded in the centre window, and you'll see by the scrollbar on the right that you don't lose anything off the top of the screen - you can scroll up and get it back. And of course your own signal from the rig's audio monitor also goes through the soundcard, so you can see both sides of the conversation. If you register with Sergei (not obligatory, but a nice gesture) you get the capability of saving the text to a file.

The bottom window is time-domain display of the incoming audio envelope which scrolls from left to right, and you can see "to hr u again" on the right-hand side. The horizontal line (mysteriously moved up above the Morse by the screen capture software) sets the decoding threshold.

It can be (and was) placed about the middle of the Morse signal in the bottom window, However Sergei has implemented an algorithm which you can invoke to set this automatically (the "AutoThres" button) which looks at the incoming amplitude and attempts to follow the mean of the incoming time-domain signal. This works pretty well, and allows the decoder to follow fades. Speed-detection is also automatic, and the algorithm adapts unerringly from painfully slow to above 60 wpm - and probably higher - see later. I can't fault it.

You can set CwGet up and go away to do something else. It will automatically track and attempt to decode any QSOs in the passband and display them for you to inspect later. The size of the window, and each sub-window, can be adjusted to cope with the resolution of your computer screen.

CwTYPE

This is Sergei's keyboard code sender, and you can run it simultaneously with CwGet, since CwType outputs digital Morse to a com-port without going through the soundcard. Sergei gives a simple one-transistor interface, and tells you how to configure the initialization file to contain your own callsign, messages of choice, startup speed etc.

You can see a typical window in Fig. 2. The "Speed" window (top left) is calibrated in characters/minute, which is how Europeans prefer to think. At my suggestion, this version also shows the speed in WPM in the bottom toolbar.

There's a "callsign" buffer which allows you to send callsign exchanges automatically. Pressing 'alt/c' puts the cursor in the "C" (callsign) window. I enter the other station's callsign in there during his CQ. When it's finished, I press f3. A callsign exchange immediately starts from the soundcard, the VOX turns the transmitter on, and we're away. What you see in the figure is the start of my next over in the three-way QSO we were having.

There are also "RST" and "Name" buffers, allowing these to be embedded in messages. You can pause transmission and toggle the computer speaker on/off for audio monitoring.

Early versions of CwType didn't have a weight control. Many modern transmitters implement an optional keying mode (QSK) which allows you to hear between elements and characters. The fast rx/tx changeover necessary often

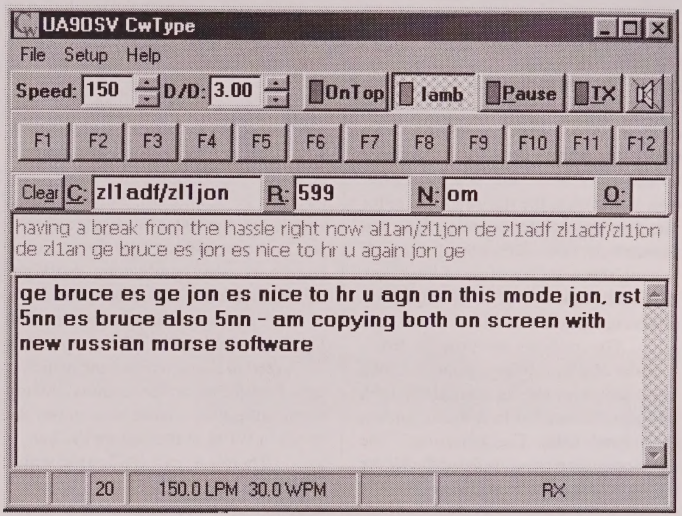

UA9OSV CwType
File Setup Help
Speed: 150
D/D: 3.00
OnTop
lamb
Pause
TX
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
Clear
C: zl1adf/zl1jon
R: 599
N: om
O:
having a break from the hassle right now al1an/zl1jon de zl1adf zl1adf/zl1jon de zl1an ge bruce es jon es nice to hr u again jon ge
ge bruce es ge jon es nice to hr u agn on this mode jon, rst 5nn es bruce also 5nn - am copying both on screen with new russian morse software
20
150.0 LPM 30.0 WPM
RX

Figure 2 - Typical CwTYPE Screen

clips outgoing elements. Adding positive weight (delaying the turn-off of each element) compensates for this. I suggested to Sergei that he should add this, and he did. Now you can set a constant positive or negative weight in the configuration file.

I noticed this immediately in the first version I downloaded because I'm keying my IC701 via the Cmos SuperKeyer. This keyer allows you to program a paddle as a straight key, and so I select this option and just connect the computer's keying output across the paddle. Why do I do this? I had an unfortunate experience once with RF getting back into my computer, and now I like to keep the computer isolated from the keying line - even though I have an opto-isolator in there.

Anyway, it turns out that in "straight-key mode", the CMOS Superkeyer clips 6 ms off all my elements. At 35 wpm that's about a sixth of a dot, which makes the Morse sound choppy (strangely, hardly anyone noticed this, but I did).

At 60 wpm, that's about a third of a dot. I checked CwGet's reading by simply sending to it with CwType, on the same computer. I suspect that CwGet would read well above 60 wpm if the element weighting was correct, but have never bothered to check again with later versions.

There's more. You can connect a

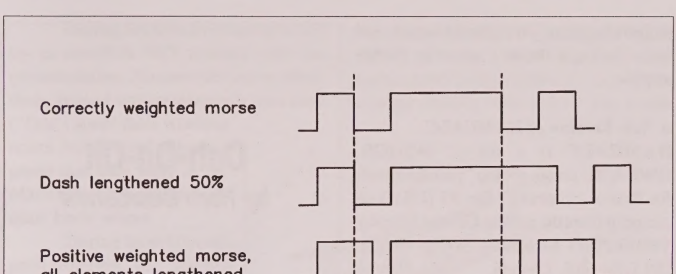


Figure3 - Weightings and Ratios

paddle to the games port, and optionally use the software as an iambic keyer! I haven't tried this, as I'm sure Sergei hasn't implemented autospace, and my fingers and brain are accustomed to this. Besides, I love my Superkeyer and K9 too much.

Weighting and Ratio-changing

I mentioned "weighting" above, and you may not be quite sure what this means. Some people confuse it with "changing the ratio of the elements", but this is quite different. Fig. 3 shows, at top, the letter "R" sent with correctly ratioed Morse. The dah and dit elements have lengths in the ratio 3:1, and are separated by one dit-length.

Some keyers and keyboards (CwType is one) provide the facility for changing the element RATIO. The middle plot shows the effect of changing the dah/dit ratio to 4.5 to 1, which increases the dah length by 50%, while keeping the space between the elements, and the dit element length constant. Actually, I don't know why you'd want to do this, as the Morse that comes out just sounds wrong.

The bottom plot shows correctly ratioed Morse with positive weighting. All of the elements have been lengthened by the same amount, in this case, half a dit-length. This makes the Morse sound "full", but it still sounds right. This is exactly the type of weighting you need if your rig/keyer/keyboard clips bits off the front of each element. You simply add a bit at the end to compensate for this. CwType does not allow this (yet) but my DOS program MU does, and so does the CMOS Superkeyer. Negative weighting does the opposite, reducing the length of each element by the same amount.

Some people contend that slower Morse should be sent with positive weighting, and faster Morse with negative weighting to make it "more readable", but having tried both, I can't agree. There's some evidence that early transmitters tended to turn off sluggishly, giving a positive weighting which could be compensated with negative weighted keying, but modern transmitters don't have this problem. On the other hand, the

slightly negatively weighted Morse I send with CwType doesn't seem to bother anyone.

A New Version of HAMCALC

HAMCALC is a set of MSDOS, GWBASIC codes giving "painless math for Radio Amateurs". For $5 (US) You can get it from the author, George Murphy VE3ERP, 77 McKenzie Street, Orillia, ON L3V 6A6, Canada.

George sent me version 35 to evaluate. It keeps growing, and he's had to remove the GWBASIC interpreter from the disk, but this is readily available. Ask around.

The HAMCALC disk contains 135 programs for computing inductance, antenna parameters, filters, great circle distances, time zones, transmission line matches and losses - almost anything Ham-related you might want to calculate!

George is always on the lookout for new programs and algorithms to include, and will be delighted to hear from anyone with suggestions. You don't need a "modern" computer to run HAMCALC! Highly recommended!

(Extracted and adapted by Tony Smith for MM from Gary Bold's 'The Morseman' column in recent issues of 'Break-In', journal of NZART)

Dah-Dit-Dit

by Herb Beardshaw

IN DAYS GONE BY there lived, on a '49' Course, a trainee TAG (Telegraphist/Air Gunner) whose name was Tee. Now everyone who is conversant with the Morse code will realise that this is a somewhat unfortunate name. If his name had been Gee or Dee or Lee, things would have been different.

There was a time when, prior to taking part in W/T exercises over the southern end of Nova Scotia, the trainees would bundle all the relevant gear into their allotted aircraft, "Stringbags" and the pilots would try to coax a little oil pressure into the old Pegasus engine by grabbing handfuls of throttle and feeding them to the fan.

FISTS CW Club – The International Morse Preservation Society

FISTS exists to promote amateur CW activity. It welcomes members with all levels of Morse proficiency, and especially newcomers to the key.

The club has awards, nets (including a beginners' net), dial-a-sked for beginners, straight key activities, QSL bureau, newsletter, and discounts from traders.

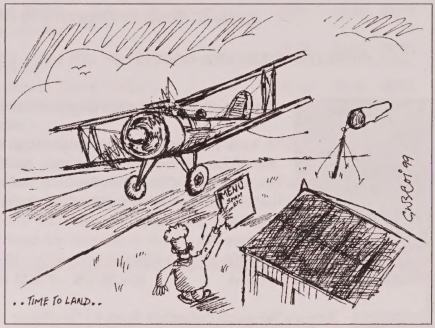
Further information can be obtained from **Geo. Longden G3ZQS, 119 Cemetery Road, Darwen, Lancs BB3 2LZ.** Send an s.a.e. or two IRCs.

During this time the trainee would try to establish W/T contact with the ground station. No-one ever knew where these ground station telegraph operators ('Tels') spent their working hours but it was anyone's guess that they were in the Marine Provinces but no-one quite knew where.

During these take-off preliminaries, the ground station 'Tel' would request the operator's name - INT name? The trainee would then bash out his name accompanied by the laid down procedure, ie, call-signs, etc, and request take-off - INT T.O. (Take-Off) and request GO. After that we bashed out the names of places we were flying over.

Cluttering up the air with such messages like 'Position uncertain but sitting on a cloud' and 'Wedged in over Wedgeport' and 'Pardon me boy, is that the Hectanooga choo-choo?' were frowned upon, as were entries in logs like 'Lost touch with CJLS 20 miles'.

However, still on the ground is our friend Tee, trying to get through to the ground 'Tel' that his name is Tee. DAH-DIT-DIT. INT name DAH-DIT-DIT. The ground 'Tel' came to the obvious conclusion that either the name started with a D, and the transmission had been cut off in the middle, or it could be a name starting with NE, or was it just someone playing the fool?



After a lot of IMIs and repeats he finally managed to get his T.O. and GO, only to have to go through the same caper the following day if a different 'Tel' was working his frequency.

Poor old Tee. He never did get much flying time in on the course because by the time he'd sorted out the confusion surrounding his name in Morse it was time to land and go to the mess for lunch (or tee).

(Source unknown. Contributed by Lee Grant, G3XNG.)

G-QRP Club

The G-QRP Club promotes and encourages low-power operating on the amateur bands with activity periods, awards and trophies. Facilities include a quarterly magazine, Morse training tapes, kits, traders' discounts and a QSL bureau. Novices and SWLs welcome.

Enquiries to **Rev. George Dobbs G3RJV, St Aidan's Vicarage, 498 Manchester Road, Rochdale, Lancs OL11 3HE.** Send a large s.a.e. or two IRCs

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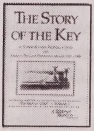

The Story of the Key by Louise Ramsey Moreau

This is The Best of MM Vol. 1. It is a reprint of a series of articles which appeared in *MM6 - MM11*. It covers the history of telegraph key from 1837 - 1941 and includes a list of American telegraph instrument makers, 1837-1900. 77 photos/illustrations, 60 pages, 5¾ x 8¼ inches (14.5 x 21 cms), S/B. **£4.25 UK - £4.50 EU - £5.00 World**

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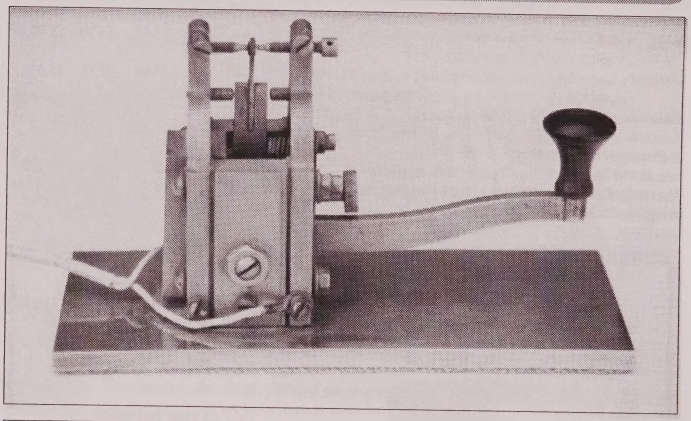
Showcase

Photo/Collection: Jan K. Moller, K6FM



Photo/Collection: Malcolm Brass G4YMB

Above: Rare land telegraph key made and used by the Swedish Telegraph Administration around the turn of the century for their land telegraph network. It was made compact to be built into switchboard panels so the arm ends in a counterweight. Regretfully, the back contact screwhead has been broken off. It has been used by K6FM since 1937. The key has such an excellent balance that it sits steady as a rock when sending.

Left: British sounder-relay probably from around 1880. The nameplate is inscribed 'GPO 157'. This instrument is in working order and requires a 24v supply.

Photo/Collection: Peter Park, GM3PIP

Rare 19th century British railway bell telegraph instrument

Photo/Collection: Dave Pennes, WA3LKN

A most interesting Vibroplex Junior with partly chrome partly nickel parts when they were switching over to all chrome. Also this is a wrinkle base Junior when they were switching from Japanned bases to wrinkle painted bases. A true 'Mule'! The owner's name interestingly (on the cord) was 'Junior' Kehn.

Receiving Morse Using Taste

Sensitivity of the Tongue to Electrical Currents and an Investigation into the Use of the Sense of Taste for Receiving Morse Signals

by Dr. E. Geoffrey Walsh GM4FH

THE TONGUE IS ADAPTED for the reception of chemical stimuli but when a gourmet speaks of the taste of some fine dish, he is usually referring not to the sensations derived from the tongue but from those of the organs of smell, the olfactory nerves. Being perpetually wet the tongue is admirably, but fortuitously, adapted for the detection of electric currents. Many people will he aware of having perceived a metallic taste after the attentions of a dentist, metallic fillings can generate currents.

The sensitivity of the tongue to electric currents was investigated long ago by two Canadian scientists[1]. They used D.C. which they interrupted by a mechanical system at different rates. They made thousands of determinations of the rate at which the individual sensations blurred into one. Below a certain frequency the stimuli were felt individually, above that there was fusion. One of their graphs is shown in Figure 1. They measured this 'fusion frequency' and varied the strength of the stimulus. The fusion frequency was higher with weak stimuli.

The curves represent the relationship between the applied voltage and this fusion. They plotted not frequency but its reciprocal, the period. So the higher the value on the vertical scale, the lower the fusion frequency. According to them, their points fell on the four curved lines depicted corresponding to the four primary tastes.

I am not aware of this problem having been looked at with modem methods. Neither would their apparatus now be considered satisfactory nor were their numerous data handled statistically, but they may of course have been right in their conclusions.

People who are not technologists or scientists may perhaps believe that knowledge in these fields progresses in a straightforward and sensible fashion. Nothing could be further from the truth! History is littered with the records of numerous false starts and blind alleys. I have occasionally come across books detailing nineteenth century patents and some of them are, to us

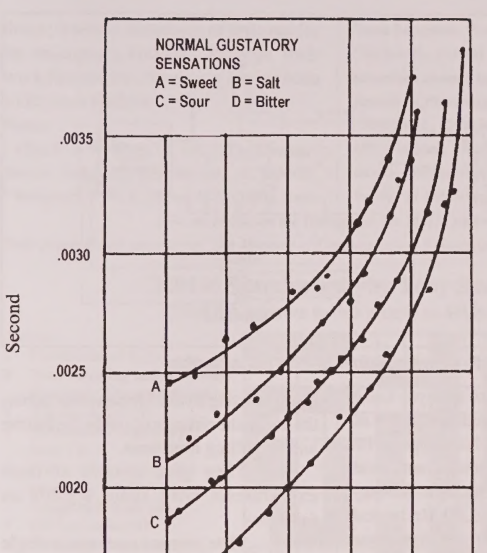


Figure 1 - Sensitivity of the tongue to electrical sensations

nowadays, so preposterous as to be comical.

The noise in the early aircraft, with open cabins and piston engines was so great that it was difficult for the pilot to hear Morse signals sent from the ground. This was, of course, at a time when telephony was in its infancy and as every radio amateur will agree, Morse being much more penetrating than speech, is the mode to be preferred in a noisy environment. Even so, it evidently could be very difficult to hear even with headphones over the ears.

I have come across an account of two American investigators who thought it would be appropriate to see if by applying electrodes to the tongue CW could be picked up and so avoid these problems[2]. They started with some experiments with D.C. They noted however:-

"On closing the key, the operator noticed an effect which at first, made him think that the lights in the room were flickering. On further investigation, however, it was noted that the apparent flicker of the lights occurred only when the key was closed. As nearly as could be determined, the effect of this relatively large current passing through the mouth was to cause the iris[3] of the operator's eyes to contract momentarily, thus giving the effect of a flickering light in the room."

They were, I think, wrong. There has been a large literature on electric 'phosphenes' seen when currents pass through the head. The action is in the

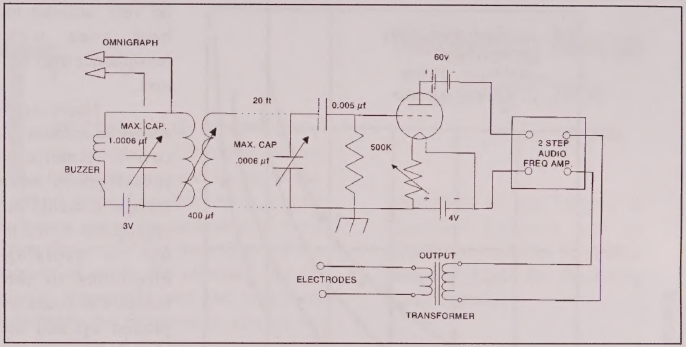


Figure 2 - Circuit of radio frequency test apparatus

retina itself at the back of the eye. Long ago I was involved in studies of some of these effects[3,4]. The iris is equipped with only slowly contracting muscle and could not be responsible for the rapid flicker.

They then used 60 Hz tapped off from the mains. No transformer was used: I wonder what our Health & Safety Executive would have commented !

They then proceeded to tests with radio frequency signals. One set of apparatus they used is shown in Figure 2. The electrodes to the tongue were fed from an audio amplifier which in turn obtained signals from a triode detector stage. There was a buzzer in a neighbouring circuit which induced R.F. currents in the coil in the grid circuit of the triode. On the top left hand side of the figure there is a connection to an "OMNIGRAPH". I do not know what this is but presume it must have been a mechanical system of sending Morse signals. If so, the method of keying was highly unusual; this was apparently achieved by connecting and disconnecting a variable capacitor across the coil in the circuit excited by the buzzer and so pulling it on tune.

They give details of their experiments with radio signals as follows:-

"The antenna used was a single wire 150 feet high and 180 feet long (45.8m x 54.9m) It was found necessary to use four stages of audio frequency amplification in order to get taste sensations of the proper intensity."

In a way, they succeeded ! However, they could only copy about five words per minute, but optimistically, they thought that this might rise to ten with training. Having completed their study they remark that:-

"The effect on the operator's eyes of contracting the iris when strong signals are received would be very disadvantageous, especially in airplanes".

Considering the speed of aircraft, even the early biplanes would have covered a considerable distance before a sentence could have been taken

down; it would have been of little use for an emergency landing! Perhaps their work fits into the category of having been a Glorious Failure.

Notes:

[1] Allen F. & Weinberg M. (1925) The Gustatory Sensory Reflex. Q.J.Exp. Physiol., 15, 385-420.

[2] Goldsmith A.N. & Dickey E.T. (1921) Radio Taste Reception. Proc. IRE Vol 9.206-224.

[3] Barlow H., Kohn H. & Walsh E.G. (1947) Visual sensations aroused by Magnetic Fields. American Journal of Physiology, 148, 372-375.

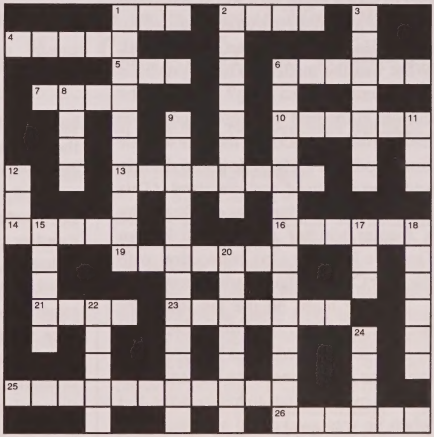
[4] Barlow H., Kohn H. & Walsh E.G. (1947) The effect of dark adaptation and of light upon the electric threshold of the human eye. American Journal of Physiology, 148, 376-381.

(For an article on the Omnigraph see MM22 p22 - Ed.)

First pulished in'Transmitting' The Museum of Communication Foundation Newsletter - Spring 1998

MM66 Searchword - by Tony Smith

(Find the answers to this puzzle in *MM66)*



Across

1 Conference of 5 (3)
2 Their licensing authority is the Frequency Allocation Board (4)
4 Kitchen sailor! (5)
5 International regulatory body (3)
6 Harry Timm's was not well received by the Deutscher Telegraphie Club (6)
7 UK key maker (4)
10 Steamship Company employing their own wireless staffs (6)
13 San Francisco museum (8)
14 Fons lives there (5)
16 Spanish club (6)
19 Sighted in 1899 (7)
21 He already knew the play (4)
23 To be sent with your contest entry (7)
25 Owned by Western Union (11)
26 Location of IARU Region 1 Conference 1999 (6)

Down

1 Prominent stationers in Wellington, New Zealand (10)
2 Author of "History, Theory & Practice of the Electric Telegraph" (8)
3 Radio & Telegraph School attended by Harry Lewis (7)
6 "Incorporated by reference" in an ITU document (14)
8 Some fast operators in this club (4)
9 School at Otley in WW2 (12)
11 Key with tilted yoke (3)
12 Its Morse operating room was known as "the den of thieves"! (3)
15 Its national society is AARC (5)
17 Canada's national radio society (3)
18 You'll never get a glass arm if you're using this method (6)
20 American Antarctic Station (7)
22 Needle telegraph patentee (5)
24 It aims to promote and encourage amateur CW (4)

Solution on page 48

The Candler System

by Wm.G. Pierpont
N0HFF

BY 1904 WALTER H. CANDLER had learned the American Morse code and worked for two years as a telegrapher. He had practised diligently and felt qualified to apply for a job as commercial relay operator in the Western Union office at Atlanta GA. But he didn't last out there even one day, and had to take a night shift job as telegraph operator at a small town railroad station.

He was deeply hurt and puzzled. What was the matter? What mysterious ingredient was missing? As was the custom at the best telegraph schools, he had visually memorized the Morse code from a printed table of dots and dashes, and then practised and practised. (This "standard" procedure was confirmed by a former teacher at the well-known Dodge's Institute - no connection with the later C. K. Dodge "Radio Shortkut".)

One night on the job, quite by accident, he discovered that when once in a while he dozed off at the operating table, he could read the fastest code coming over the lines to his sounder. Yet when he was awake and alert he could catch only a word here and there.

It was then that he began to realize that telegraphy is primarily a mental process, and that the so-called "sub-conscious mind" must play a vital part in it. (At that time there was quite a bit of popular writing about the "sub-conscious mind," which no doubt helped him put it all together.)

He began experimenting until he had solved his own problem and mastered the code himself, and in time he became qualified to teach others how to do it, too.

By 1911 he had established his own "school" in Chicago to teach "The Candler System," later moving it to Asheville, NC. Although he died on 23 April 1940, his wife, who was already an experienced telegrapher herself when they were married in 1924, and had worked with him since, continued to handle the course for a number of years. (It was last advertised in *QST* in 1959.)

The Course

Originally his "High Speed" course was designed for operators who already knew American Morse, but were stuck at some too low speed. Later he added the International code to it, covering both codes.

Still later a new course, called "The Scientific Code Course," designed to be successfully used by beginners

WALTER H. CANDLER
Originator of the famous CANDLER SYSTEM and founder of the Candler System Company
LEARN or SPEED UP YOUR CODE at Home
With the NEW CANDLER SYSTEM
TRAINS YOU TO MEET NEW CODE SPEED REQUIREMENTS
Obtain Your Amateur or Commercial License in ½ Usual Time With
The New CANDLER SYSTEM Training

Extract from an advertisement in the 1942 edition of the ARRL Radio Amateurs Handbook

working alone, was created from the regular "High Speed" course by modifying it to add helps to get the beginner started. (Thus it contained all that the "High Speed" course contained.) That new course was later renamed "The Junior Code Course," and was the one I obtained in October 1939, and made extensive notes on.

There is evidence that, although the essentials stood out strongly and firmly, over the years the details varied in minor ways. His basic philosophy may be stated as:- "This system trains you to use your MIND" to develop "scientifically your coordination, concentration and confidence" - your responsiveness.

The course consisted of ten lessons plus considerable valuable supplementary material, mostly as letters. It is summarized below.

The Essential Principles

Since Candler was concerned with those training to become commercial operators, he first emphasized the importance of healthy living: eating, exercise, breathing, etc. This emphasis was needed in those days because the typical city operator worked long hours in unhealthy smoke-filled, darkish, crowded and poorly ventilated offices.

1) Develop ***sound consciousness***. - In Lesson 7 he wrote: "In learning code it is necessary to consciously count the dits and dahs of the various signals, both in sending and receiving. By repetition, the sub-conscious mind gradually assumes this burden of counting them.

"As long as you must consciously count them, work will be slow, but as the sub-mind takes them, they go faster and faster." "As you progress," he wrote elsewhere, "Begin to respond more

readily to the sound patterns than to visual ones: learn to shift from what you mentally see to what you hear.

"So long as you must consciously remind yourself that so many dits and dahs 'stand' for certain letters, you are not learning code." So, "when you hear didah, no longer say to yourself: 'didah stands for A.' Instead, when you hear didah, hear A. Do not translate."

"In learning code you do not have to relearn words, but you do have to change the approach...from visual to auditory... Once you have mastered this consciously, your sub-mind will handle that detail, and do a faster, better job than your conscious mind possibly can."

Critique: We must remember that he and most of his students had already "learned" visually, and now this must be ***replaced*** by direct auditory recognition. Here was the real reason they all had gotten stuck at some slow speed.

This traditional approach must have blinded his thinking so that it did not occur to him to ***start the beginner with sound alone***, and so save the beginner from having to cross that annoying hurdle with its discouragement.

2) Your sub-mind will only do what you have consciously trained it to do. Therefore, teach it the ***right way*** and the ***same way*** consistently from the beginning. Think and act ***positively***: (The "I can do it" attitude).

If you maintain a positive attitude as you think and consistently practice, the sub-mind will take over the task more quickly, and it will become easier each time you do it. Conscious effort is needed until it becomes automatic.

First you learn by consciously employing the principles in your regular daily practice. Then gradually, if you practice as directed, your sub-mind will take over the job with less and less conscious effort, and you will make good progress.

3) Learning to ***read code***, to ***receive***, is the important thing. That is, to understand without having to write it down. Reading means listening and understanding what is being said, just as in reading ordinary print or when listening to someone speak.

Reading code must never depend on copying. As soon as you have learned all the letters, start listening to good code on your receiver (or nowadays, practice tapes, etc.) for 5, 10, 15 minutes at a time, or until you become tired - even if you cannot put together enough consecutive signals to form words.

Keep on, and soon you will be catching small words and then larger ones. But do not practice too long at one time - never when fatigued. "I am acquiring the ability to read words subconciously now. When reading code, I know, as soon as a word is sent, what the word is, although I didn't consciously spell it out to myself as it was coming in," wrote one student.

4) ***You cannot write down what you cannot read (receive).*** This is step two after learning to receive. Writing down what you receive is a routine matter that will take care of itself if you are properly trained.

Of course, in the initial stages of learning the alphabet and numbers, etc, you must copy letter by letter, slowly, just as you had to learn to read that way.

After this stage, stop until:- When you get so you can listen to code and read

it at 15 to 25 wpm without copying; begin copying some at each practice period. Commence this way: each day copy for 10 - 15 minutes, striving to copy one or more signals behind, then spend a similar period just listening to good code without writing.

5) When you do copy, learn to ***copy behind***. If you have been copying letter by letter you must begin systematically to overcome it, and the best way is to listen to good code and form the habit of reading it without copying.

As you acquire the independent code reading habit, by daily practice, you will find it easier to drop behind a few signals without confusion or fear of losing out when you are copying. You must break the bad habit of copying letter by letter.

Get in the habit of carrying the letters in your mind, forming them subconsciously into words and sentences, without writing them down. "When I found I could begin to read small words as easily by sound as by sight, I was delighted. I soon learned to read words 'in my head'. After that, copying them by pencil was easy. Previously, I had been writing words down letter-by-letter: that was wrong!" wrote a student.

CANDLER Trained Jean Hudson, 9 years old, W3BAK, Official Champion of the World in Class E.

Jean obtained her ham license at the age of 8, and two months after she began Candler SCIENTIFIC CODE and Touch Typewriting Courses, could copy 30 wpm on her "mill." At the age of 9 she won official championship in Class E, against rigid competition.

Extract from an advertisement in the 1937 ARRL Handbook - 9 year old Jean Hudson could copy 30 wpm

6) Practice intelligently: in the ***right*** way, daily, regularly, in short and well-spaced periods, purposefully. Never practice errors. Practising when tired is not efficient use of time.

A good schedule is 30 minutes daily, 15 minutes in the morning and 15 minutes in the afternoon or evening. The time between practice periods is important - use it to prepare yourself to be receptive by cultivating a positive attitude toward yourself and what you are trying to do.

The Ten Lessons

With these statements of basic principles in mind, let us look at the lessons for the beginner. Note that each new group of code letters was presented in the old

visual dots and dashes manner, but the student was told to ***think*** of the letters in terms of dits and dahs as they sound. He seems to have anticipated that a typical student would take a week or two to complete each lesson.

Lesson One:

Emphasis on sound units. The first group was **E I S H**, to be sent smoothly and in accurate, regular timing by the student with his key, saying the dits as he pounded them out. Candler recommended that two or more beginners work together so each could send to and receive from the other.

As soon as he can recognize them easily and send them smoothly, he was to form words, such as "he, is, see, his, she." Next to take the letters **T M O**, and do the same way, saying the dahs as he sends them, and then to make small words using both sets of letters, as before.

Lastly the letters: **A N W G**. Then practice small words, including as many of the 100 most common words (listed below) as can be formed from these eleven letters.

At one period Candler either supplied or recommended the use of mechanical senders, such as the Teleplex, with his course for the student studying alone. This would provide an accurate timing sense as well as good hearing practice. With a machine or companion, he would be able to listen and, during this initial period, copy letter by letter as he heard each character.

Lesson Two:

Emphasis again on thinking of the letters in terms of dits and dahs as they sound, not as they appear in dots and dashes. Groups of new letters to be learned the same way: **D U V J B; R K L F; P X Z C Y Q**. Words to be practised included the rest of the shorter 100 most common words. Emphasis on accuracy of timing, and that repetition builds habit (whether good or bad).

Lesson Three:

Emphasis on knowing you are right, then going ahead and making it a habit by repetitive practice. Analysis of the letters in code, accuracy of signal, spacing and speed: precision. Get in the habit of instantly recognizing each and every letter when you hear it, without having to stop and think: automatic association of each signal with its letter.

Also now learn the numbers and commonest punctuation. When you have learned the letters so that you do not have to "stop and think" of what character any combination of dits and dahs represents, begin listening to good code every day regularly without copying, even if only for 5 minutes at a time.

(The radio was his favorite source of good code: commercial press and government stations were on 24 hours a day. Now we have ARRL code practice, tapes. etc.) Catch everything you can as you listen. You may not get much at first, but keep trying and you will soon begin to hear letters and words.

Lesson Four:

Think of the code as being easy to learn. Trust your sub-mind to do its work. Review and practice, especially any characters you tend to miss or confuse, until they are automatic.

CANDLER Trained T. R. McElroy, World's Official Champion, Class A. Speed 69 wpm.

Champion McElroy says:

"The CANDLER SYSTEM is the only training I had for my championship code contests. It taught me to read code by sound as easily as I read print, and to put it down on my "mill" by touch, as fast as it comes, without having to think of how words are spelled. Co-ordination and Concentration are necessary to the handling of code at all speeds. The CANDLER SYSTEM in this respect is unique, scientific, exact. I recommend it to those wanting to learn code right, as they'll be using it over the air, and to those who want speed."

CANDLER SYSTEM Taught at HARVARD University by Champion McElroy.

A Ted McElroy endorsement in the 1937 ARRL Handbook advertisement for the Candler system.

Every character must stand on its own feet. Keep drilling on the 100 most common words, both receiving and sending. Begin using the "two-column drill" where you set up two parallel columns of three or four letter words, each having the same number of letters; then go down the columns spelling the word in the first column out loud while simultaneously writing down the other.

Then do the same, reversing the columns. These are the first easy drills on learning to copy a word or two behind.

Lesson Five:

Practice each letter and character until you know them all so well - whether receiving or sending - that you don't have to stop and think about them at all. Do the same with the 100 most common words. Keep up the practice of the two-column exercise started in Lesson 4, going on to words with a few more letters as you find it easier.

This is to ***help disengage conscious attention*** from the proper functioning of the sub-conscious mind so that it can do its work unhindered. Learn to trust it by continuing this kind of practice until it becomes easy. This is a highly successful method of training to shift the effort from conscious to automatic, that is, subconscious, making it a useful habit.

Lesson Six:

Development of skill is developing coordination, where everything runs smoothly. It begins by constant practice listening to and sending consistently perfectly formed code characters, learning to recognize each code signal instantly, learning to read it all easily, and when copying, to write it down in a uniform, simple style of handwriting. Watch for any step along the line where there is any hesitation or question, and practice to overcome that block.

Give this your attention, and allow

time for it to develop until it becomes automatic, habitual. This is the scientific way. Do some practice copying mixed five-letter groups, but do not write down any letters of a group until the whole group has been sent. Have wide enough spaces left between groups to allow you to write it down before the next group starts. (His emphasis throughout the course is on receiving and copying normal English, not ciphered groups.)

Lesson Seven:

Emphasis on proper timing while sending. Start by sending a series of letter **E**'s with wide spaces between them, first with six counts between letters, then gradually reducing the space to normal one letter space. Then do the same way with **S, T, H, O**, etc. (Here he discussed "counting" as given above under "*Essential Principle 1 - Sound Consciousness, Critique.*")

Lesson Eight:

A discussion of "glass arm," or telegrapher's paralysis, and its prevention by certain exercises, relaxation and proper warm-up. Continuing practice of fundamentals.

Lesson Nine:

Obstacles to progress listed as: 1) lack of practice, 2) thinking visually rather than by sound, 3) hesitation over poorly learned signals, causing loss of the following ones, 4) looking back over one's copy while copying, 5) negative attitudes. One must force oneself to copy behind by degrees, gradually.

Lesson Ten:

Learning to carry words in your mind by continuing the copying behind practice. Learning to write rapidly and legibly as an aid to receiving. Learning to copy on the typewriter. (He had a separate course specifically for this.) Learning by doing until it become second nature.

The 100 Most Common Words In English

go am me on by to up so it no of as he if an us or in is at my we do be and man him out not but can who has may was one she all you how any its say are now two for men her had the our his been some then like well made when have only your work over such time were with into very what then more will they come that from must said them this upon great about other shall every these first their could which would there before should little people

(Six of these words take the same time to send as the number zero (0): are, him, men, on, so, no.

Fourteen more of them are shorter still: the, its, to,, us, am, if, as, be, we, an, me, at, is, it). Twenty short words.

(Reprinted and specially edited for MM from Bill Pierpont's book "The Art and Skill of Radio-Telegraphy" This is a revised and expanded version of an article which originally appeared in MM10, p.1) ***MM***

Wanted - articles and tips on making and restoring keys - contact *MM*

The CW Centre

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· Hand key, kit	£43.50
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MFJ

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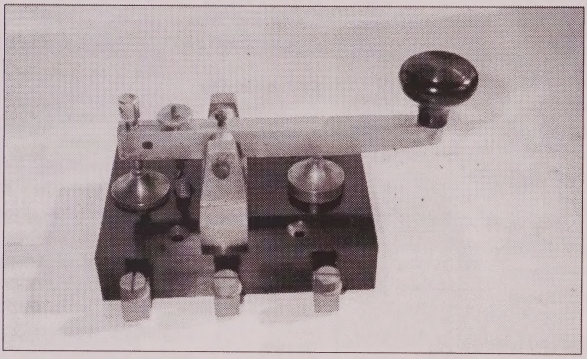
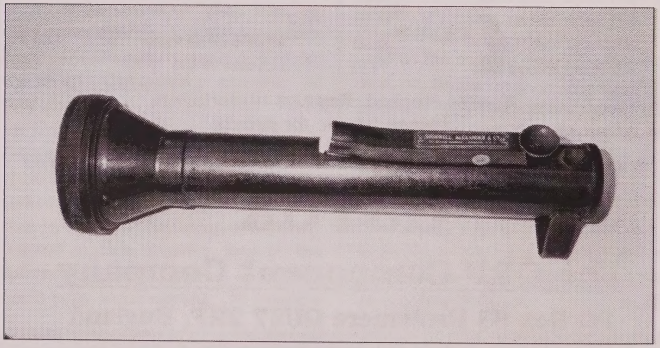
Info Please!

Please send all information to the Editor, Morsum Magnificat so that readers can share the information



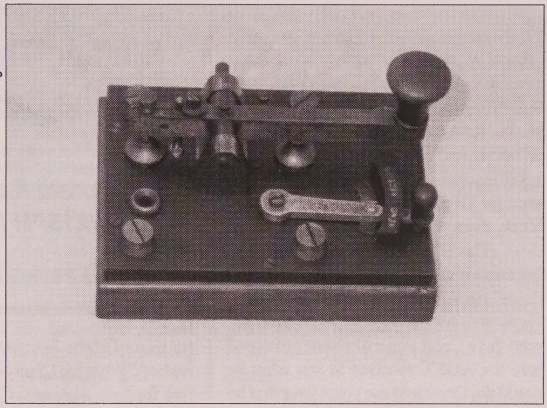
Photo/Collection: Wyn Davies

Australian Post Office key marked 5881/123/7. It has a close resemblance to Clipsal keys.



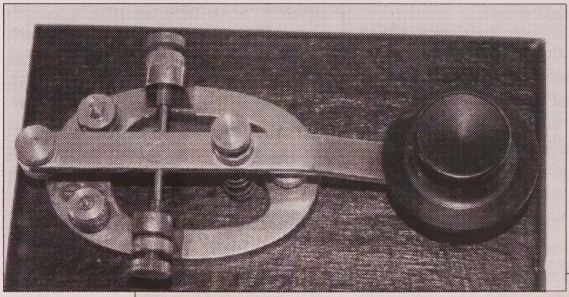
Photo/Collection: Wyn Davies

Did this instrument have a specific application? Signalling torch by Shimwell Alexander & Co., 20 Bevis Marks, London E.C.3. There is a spare bulb in the key housing

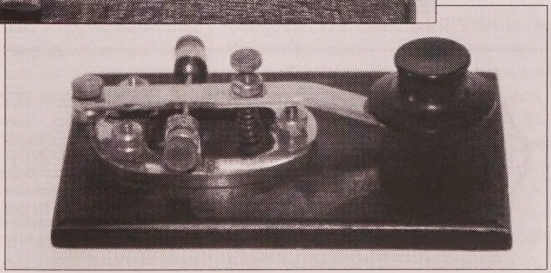


Photo/Collection: George Robbins

British coast radio station key



Photo/Collection: Jean Le Galudec



A key of unknown origin in the collection of Jean Le Galudec.

Bluffing Through the Code

by Donald K.deNeuf, WA1SPM (SK)

It was in the early 1930s. The depression was taking its toll everywhere including Nebraska. Cecil Coombs, Morse telegrapher, was out of a job. He heard that broadcast station KFAB in Lincoln was looking for an operator to copy the International code transmissions made by Press Wireless, Inc., for Transradio Press Service at New York, over WCX and WJS.

Cecil did not know the International code, having grown up with American Morse, but he was desperate. He went to see the KFAB Chief Engineer, who gave Cecil a pair of phones plugged into the AGSX receiver to see what he could do. Cecil told me years later that he listened to the test for a bit then asked the Chief to "turn off the squeal" (turn off the BFO).

The resulting headphone clicks were enough that he could get two or three letters, sometimes more, in Morse out of each word, "so I had no trouble in putting the stories together. I did a bit of guesswork on figures as you can imagine, but I got the job done and gave KFAB perfect copy, thanks to all the press I'd handled for Western Union over the years."

The next day he asked the Chief for a copy of the International code who replied "What for? You copied the station fine for over an hour". Cecil told him he just thought it might come in handy for reference on some of the seldom used punctuation symbols.

He later got a job with the Burlington Northern Railroad and eventually became both a radio "ham", president of the Morse Telegraph Club and Editor of "DOTS & DASHES". He used to say he was glad when he became a ham that he didn't have to use American Morse on his call, W9LHL!

He retired from the Burlington and became a silent key some years ago. ***MM***

THE MORSE ENTHUSIASTS GROUP SCOTLAND

MEGS was formed in 1991 to encourage the use of Morse, especially by newcomers. Regular skeds are held using our callsign 'GMØRSE' each Monday and Thursday from 7 until 9 p.m. (local time) around 3.530MHz. Among other services, we offer Morse practice tapes free of charge, other than postage. This offer is now also available to *MM* readers. Membership is open worldwide, the 'Scotland' in our title simply shows place of origin. Lifetime membership £1.00.
Details from Secretary: G.M. Allan GM4HYF, 22 Tynwald Avenue, Rutherglen, Glasgow G73 4RN, Scotland.

Your Letters

Readers' letters on any Morse subject are always welcome, but may be edited when space is limited. When more than one subject is covered, letters may be divided into single subjects in order to bring comments on various matters together for easy reference. Please note that the views in readers letters are not necessarily those of MM

KPH-Wireless Giant

I have just read my first copy of MM avidly, with many nostalgic thoughts being triggered by the words before me.

I served as a Merchant Navy Radio Officer for a few years travelling the oceans of the earth. The article on the demise of something as great as Radio Station KPH (giant it was!) struck me as terribly sad. We have to move on but to destroy its very existence is vandalism.

Reading of the confusion which reigned at times of great activity, in part answered a question about KPH I have had in my mind for many years.

In the year 1974 I was on a Reefer ship crossing the Pacific from Long Beach to Yokohama, receiving information of weather systems via Ocean Routes/KPH. Somewhere in mid-Pacific we ran into an extremely fierce tropical storm and for a while the ship was in danger of being overwhelmed - not a pleasant experience for those on board.

We had not received notification of the storm from KPH. The Captain asked me to contact KPH for an explanation. I was surprised to receive an apology from the operator, saying that the Tropical Storm Warning addressed to us had been inadvertently put in a drawer and not transmitted to us. My trust and confidence in KPH was a bit shaken but at least I was exonerated from being thought slack in duties.

Perhaps the confusion at KPH was the answer - so now I can forgive them.

William P. Jones
South Shields, England

The French DYNA Key

With reference to Wyn Davies' DYNA key shown in 'Info Please' in *MM66,* this is the '1927 PTT Key' manufactured in 1929 by the French DYNA-CHABOT Company. The trademark DYNA is on the wooden base.

The first version was all brass and the second was nickel-plated. Later, another French company, G. JARDILLIER manufactured the same keys.

DYNA was founded in 1921 by A. CHABOT. He had worked for the 'Establissements PERICAUD' since 1909 where he made the first crystal radio set.

During WWI he was a radio officer in the 8ème Régiment du Génie and afterwards returned to PERICAUD as company manager until 1921.

The DYNA Co. manufactured other keys - Manitone (circa 1954) , Maniflex American model (double action side-swiper) and a lot of radio and electrical components. In December 1989, the DYNA Co. closed for financial reasons.

Christian Chefnay
Lucinges, France

Illustrated Morse

I recently acquired a booklet (undated but possibly published during WWII) by N. Sandor, entitled The Morse Code, which describes what the author calls "'A New System of Learning the Morse Code'. I wonder if any of your readers ever managed to learn Morse by using this method.

The system explained in the booklet uses the rhythm of English language words and syllables to represent the dots and dashes of Morse characters. There are 26 words/phrases to learn, each representing a Morse letter. This is purported to be easier than learning what is referred to as a meaningless combination of dots and dashes. The original illustration is in colour and is a 4-page spread. Examples of the illustrated words/Morse characters are shown.

K. J. Lloyd
Cheltenham, England

Examples of Illustrated Morse

The North Eastern School of Wireless Telegraphy

Tony Smith's article indeed brought back many memories. My seagoing training was done at the School of Marine Radio, which was then (1949/50) part of Air Service Training, the Civil Aviation training establishment at Hamble, near Southampton.

The description of the course was very similar to that in the Bridlington school prospectus, so I guess it must have been based on some agreed format produced by the marine wireless employers and the schools. I no longer have the Hamble prospectus, but I do have my copy of the "Memorandum of Agreement" dated 1947, which laid down conditions of employment for Radio Officers, negotiated between the employers and the Radio Officers' Union. At that time, the starting pay stood at just £20 per month, and the top rate for an experienced Chief R/0 on a fairly large passenger ship was £43 p/m! Food and accommodation were, of course, provided free whilst on board.

The course leading to the PMG (Postmaster General's) certificates at that time nominally occupied 8 months to reach the 2nd Class standard (plain language Morse at 20wpm and code groups at 16wpm) and 12 months for 1st Class standard (p/1 Morse at 25wpm, code at 20wpm), but because of the relative timing of the course and exams we actually took the 1 st Class exam after 10 months.

One point regarding the Marconi "Oceanspan" - it is described in the photo caption on page 33 of MM66 as a CW/ ICW transmitter, but it is in fact CW/ MCW. In an MCW (modulated continuous wave) transmission, an audio tone is used to vary the amplitude of a keyed continuous carrier, typically with a modulation depth of up to 80 per cent. In the "Oceanspan" this is achieved by a 1 kHz oscillator based on a parallel pair of 807 valves, which anode-modulates the transmitter power amplifier consisting of three parallel 807s.

The term ICW (interrupted continuous wave) describes a technique in which the carrier is turned completely on and off at an audio frequency rate to produce a tone-modulated transmission. In some designs, the interrupting signal is applied only to the PA stage, but often the carrier oscillator is interrupted at AF as well. The interruption can be achieved in several different ways:

(a) By means of a mechanical commutating switch, attached to the shaft of a motor-generator set, for example.

(b) By increasing the feedback coupling in the carrier oscillator to the point where it begins to "squegg", biasing itself to cut-off and then coming back into oscillation again as charge leaks away from the grid capacitor, with component values chosen so that this process repeats at audio frequency.

(c) By using unsmoothed pulsating DC as HT. In the Marconi 381 transmitter, pictured on page 31 of MM66, this is done by switching out the "pi" filter in the supply line from the full-wave rectifier to the single RF oscillator/PA valve. The transmitter is supplied from a 500Hz alternator, so the output RF is interrupted at 1 kHz.

A sophisticated variant of (c) is to be found in the ET8025 emergency transmitter, part of the RCA Type 4U radio rack installed in American-built T2 tankers of the WWII era, in which the carrier oscillator and PA tetrode valves effectively doubled up as rectifiers. The circuit comprised a push-pull LC oscillator (2 x 1624 valves) driving a push-pull PA (4 x 1624 in parallel push-pull), with the valves arranged in two independent chains. The HT was raw AC supplied through a centre-tapped transformer from a 350Hz alternator, pulsing each chain in turn to give a 700Hz modulated output.

From the point of view of the receiving operator, MCW and ICW signals sounded not all that different, with ICW perhaps somewhat rougher, but it is important to distinguish between the two techniques.

Geoff Arnold, G3GSR
Broadstone, England

N.E. School of WirelessTelegraphy

With reference to the article on N.E. School of Telegraphy in *MM66,* I did not attend this school but the article was of much interest, bringing back memories of those times. The war was two months old when I enrolled at the Manchester Wireless College. I was 17.

Only the 'Special' certificate was on offer at that time, the demand for junior R/O's being great, to enable a continuous radio watch on all ships. I can recall that all day and every day for the first six weeks, only Morse was the subject taught. At the end of that time all students could meet Postmaster General's (PMG) examination requirements of 20 wpm plain language, and 15 wpm code. It is hard to understand the trouble some people have in learning Morse.

It is also remembered how a Marconi representative appeared at examination time, seeking recruits for their sea-going staff. I have spoken to 'Special' certificate holders, who say that they did not send so much as a single dot throughout the war, 'radio silence' being responsible. The Morse qualification could be 'banked', so that at some future time a second class PMG certificate could be obtained by passing a technical theoretical test only. For a first class PMG certificate the complete set of examinations must be passed. This was the route I took, hours of sea time being spent pouring over the Admiralty books. A first class certificate is now on display at my modest amateur radio telegraphy station. Since leaving the sea, I have mostly been involved in radio communications, finding my knowledge of Morse useful on many occasions, both as operator and engineer.

H. Hampson, GWØAWN
Penmaenmawr, Gwynedd, Wales.

Vibroplex Bug?

Does any *MM* reader know what kind of "bug" (insect) appears on the Vibroplex label

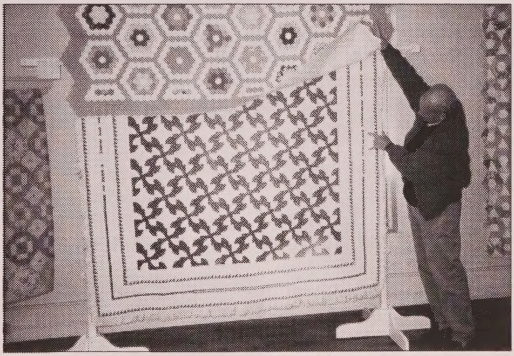
Chris Bisaillion, VE3CBK
Ontario, Canada

Needle Telegraph?

During a recent extensive trip to the USA my wife I visited Harrisonburg, Virginia to see the Virginia Quilt Museum. I have made several important career switches in my life, one of them running, with my wife, a patchwork and quilt shop. Through the years, watching my wife teaching patchwork techniques to hundreds of ladies, and running the shop while my wife was teaching, I have become quite knowledgeable on the subject of quilts. Thus, a visit to that museum was something we were both looking forward to. It is housed in a nice old building (301 South Main Street, tel: (540) 433-3818) and it collection contains some very old, nice antique quilts, some dating back from the early 1800's. Most of the quilts exhibited are well documented and show their 'historic CV'.

I suddenly spotted a relatively new patchwork quilt, a "Drunkard's Path" a.k.a. "Salomon's Puzzle" design, but with a Morse text sewn as part of overall the design, plus some small text in Morse, embroidered at the bottom. I was intrigued and asked the Staff for information. They knew the name of the lady who made it, the year it was made (1976) and that the Morse text was a biblical admonition, but nothing more. The lady who made it had passed away some years ago so there was no way to find out why this Morse text had been incorporated in the design. Of course I did not rest till we had the whole quilt unfolded and in front of us. The Morse code text, which ran around the border, read: *" the way of transgressors is hard proverbs 13:15 "*, whilst the embroidered text read: "*lucy catherine bowie culpeper virginia 1976"*

(For those who know about patchwork: the fabric making the text was appliquéd to the top, and it was well dimensioned, well spaced, no errors. The same went for the embroidered text. This quilt won 'Best of Show' in the 1977 NQA National Show and also at the 1981 NQA Bicentennial Show).

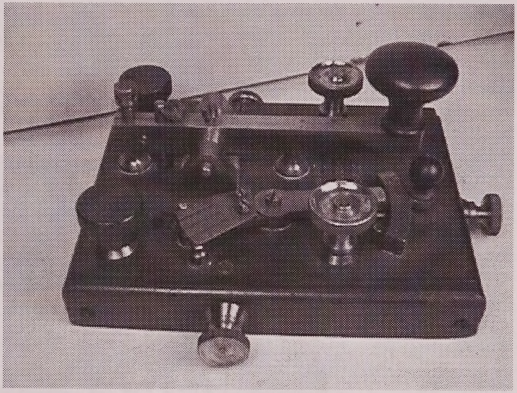


Albert Spaans points to the Morse message around the quilt

Albert Spaans
Saint Brice de Cognac, France

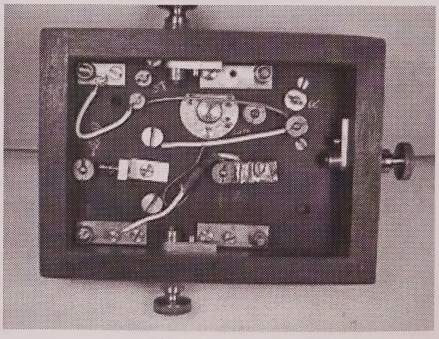
Keys Used by the Great Northern Telegraph Co.

I have one of the keys shown in the article on The Great Northern Telegraph Company (MM number 59 page 52) and have been trying to find out who made it. the key is marked No.43066 St. N.T.S's FABRIK KJOBENHAVN which looks like the same writing as on the 1890 model 200/604 owned by Wyn Davies. In the GNT article details of other models were requested. Enclosed is picture of another key and would appreciate any other information anyone might have on this model. I'm especially interested in the year as it looks alot like the 200/604 with the S/R switch and wood base



I also have a GNT Morse Key No. 605 which I was able to identify from the same article page 52 of MM59. I obtained both of these keys from the land down under, New Zealand and Australia.

Steve Massey, N6TT/K6KEY
Manhattan Beach, California, USA.



New Web Pages

Many items from my telegraphy collection can be seen at a new web site. There are many new telegraph instruments to view. The address is: http://www.faradic.net/~gsraven/fons_images/fons_museum.html

Fons Vanden Berghen
Halle, Belgium

ReadersAds

Readers advertisements are free to MM subscribers. The number of insertions should be specified, otherwise it will be assumed that it is required in the next issue only. Non-subscribers are welcome to advertise in the Classified Ads section. Please contact MM for styles available and rates.

New - Ads can include one photo free of charge

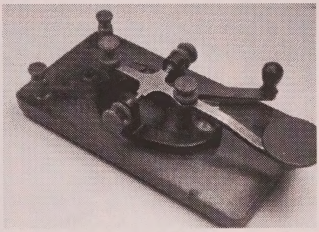
FOR SALE

FOR SALE: RAF Morse key Type D £90; Rare 19c British railway bell telegraph instrument - offers invited. See *MM* Showcase for a photo. Telephone Peter on: +44 (0)1771 623 654 for details.

THE MM Q & Z CODEBOOK, a comprehensive 82-page list of the Q-codes and Z-codes, including a one-page list of the original Q-codes of 1912. Available from Dick Kraayveld PA3ALM, Merellaan 209, 3145 EH Maassluis, Holland. Price £5 UK, or US$10.00 outside UK, including postage in both cases. Payment accepted in cash only.

BOOK: "Radiotelegraph and Radiotelephone Codes, Prowords and Abbreviations." 2nd Edition. AUD$16 posted within Australia. 90 Pages. Q,X,Z Codes, 97 Phonetic, 20 Morse Codes. Phillips, Myer, 10,11,12,13 Codes. Much other info. Probably world's best listings. Internet: http://www.nor.com.au/community/sarc/phonetic.htm. Also via MM. VK2JWA, John W.Alcorn. QTHR. +61 02-66215217. jalcorn@nor.com.au VISA, MASTERCARD, BANKCARD (Aus, NZ) accepted.

FOR SALE OR TRADE: Early 20th century Manahttan Electric Supply Company Morse key on original factory issue Mahogany base. Clean and complete with all original parts. Includes a photocopy from a turn-of-the-century catalogue showing this key for sale. $50



Vibroplex 'original' bug with grey base in excellent condition with a plexiglass cover. $135. Other keys, bugs, sounders, relays and odd telegraph items also available. Dave Pennes WA3LKN; 4607-C Santa Cruz Drive. Indianapolis, IN 46268-5354. phone (317) 471-9605. e-mail: dpennes@hotmail.com

Wanted - articles and tips on making and restoring keys - contact *MM*

ReadersAds

FOR SALE - continued

OFFERS: L. C. Smith No. 8 typewriter as shown on the inside rear cover of MM66. Bob Rollheiser, 10001-104 Ave., Peace River, Alberta T8S 1M4, Canada.

18+ PAGE ILLUSTRATED LIST all kinds of telegraph related items surplus to my needs including straight/semi-automatic keys, sounders, relays, KOBs, military items and many miscellaneous items (e.g. WU dolly gram - 1950s'-code learning machines. $3.00 plus equivalent of 4US stamps ($5.00 refund on $25 purchase). Dr. Joseph Jacobs, 5 Yorktown Place, Fort Salonga, NY 11768, USA. Phone: 516-261-1576. Fax: 516-754-4616. E-mail: joekey@aol.com

WANTED

BOOK WANTED: Original or photocopy of the book 'A Telegraphic Code for Fingerprint Formulae' by Superintendent C. S. Collins, published in 1921. Contact Geoffrey Walsh, 64 Liberton Drive, Edinburgh EH16 6NW, UK. Phone: (0) 131-664-3046. e.mail: Geoffrey.Walsh@ed.ac.uk

WANTED TO BUY: Telegraphic Code Books, as used to reduce the costs of telegrams by replacing common phrases with codewords. Would be interested in both originals of photocopies. I am a hobbyist in Cryptography and am facinated in different ways data is and has been represented for different purposes (e.g. speed, economy, confidentiality etc.) Also interested in related items. Letters to Mark Darling, 132 Knowlands, Highworth, SN6 7NE, United Kingdom or e-mail: darling@patrol.i-way.co.uk

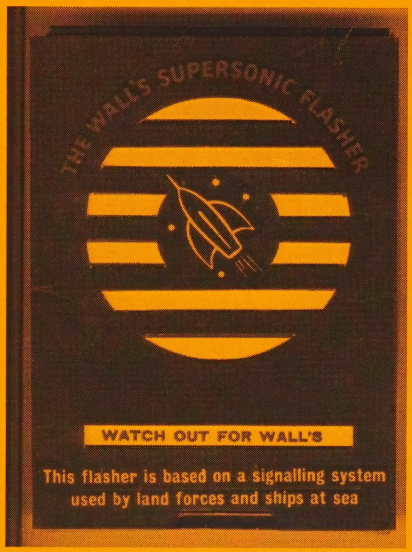
WANTED: TELEGRAPHY ITEMS (esp. land-line). I am looking for somewhat special telegraphy apparatus: Single and Double Needle, Wheatstone etc. Buy or swap. I can swap for early electricity (e.g. tubes from Crookes, Röntgen and Geissler; Ruhmkorff; Wimshurst;..), very old radiovalves, some telephony and of course telegraphy. Who else collects telegraphy ?? All letters answered. Fons Vanden Berghen; Lenniksesteenweg 462/22; B-1500 Halle, Belgium.
Tel. +32.2.356 05 56 (home: after 8 pm my local time) or office: +32.16.38 27 21 or e-mail: fovabe@telindus.be

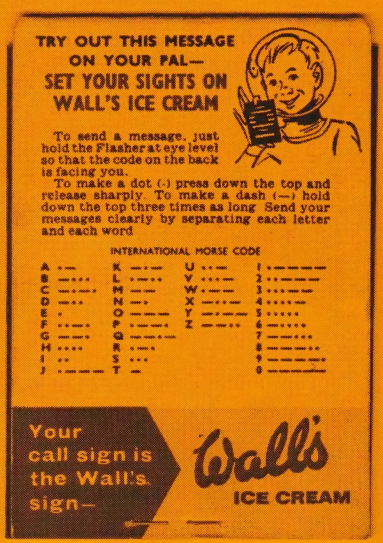
SOLUTION TO MM66 SEARCHWORD

(Page numbers in MM66 shown in brackets)

Across: 1 WRC (6), **2** PARS (11), **4** Butch (16), **5** ITU (4), **6** Report (38), **7** Kent (23), **10** Cunard (34), **13** Maritime (6), **14** Halle (48), **16** EAQRPC (2), **19** Sherman (6), **21** Buck (46), **23** Summary (3), **25** Mackay Radio (19), **26** Norway (4).

Down: 1 Whitcombes (18), **2** Prescott (45), **3** Spokane (19), **6** Recommendation (4), **8** EHSC (2), **9** North Eastern (29), **11** Dow (25), **12** KPH (26), **15** Aruba (9), **17** RAC (7), **18** Cailin (19), **20** McMurdo (14), **22** Cooke (13), **24** EUCW (2).


THE WALL'S SUPERSONIC FLASHER
WATCH OUT FOR WALL'S
This flasher is based on a signalling system used by land forces and ships at sea


TRY OUT THIS MESSAGE ON YOUR PAL—
SET YOUR SIGHTS ON WALL'S ICE CREAM
To send a message, just hold the Flasher at eye level so that the code on the back is facing you.
To make a dot (·) press down the top and release sharply. To make a dash (—) hold down the top three times as long. Send your messages clearly by separating each letter and each word
INTERNATIONAL MORSE CODE
A ·— K —·— U ··— 1 ·————
B —··· L ·—·· V ···— 2 ··———
C —·—· M —— W ·—— 3 ···——
D —·· N —· X —··— 4 ····—
E · O ——— Y —·—— 5 ·····
F ··—· P ·——· Z ——·· 6 —····
G ——· Q ——·— 7 ——···
H ···· R ·—· 8 ———··
I ·· S ··· 9 ————·
J ·——— T — 0 —————
Your call sign is the Wall's sign—
Wall's
ICE CREAM

Supplied by Jack Barker

The Walls Supersonic Flasher. A promtional item given away by the Walls Co. inthe 1950s when space travel and Morse code were equally "cool" It is made of cardboard is operated by squeezing the top and bottom edges.

MORSE

TRAINING EQUIPMENT

As specialists in Morse and Short Wave Equipment we can supply schools and those training as operators with a wide range of items from stock.

MORSE KEYS in a variety of patterns. The three types listed here are available in quantities from stock :—

SCHOOL pattern in chromium-plated brass on polished wood base, at 6/6

HEAVY DUTY model in solid lacquered brass on wood base 15/-

SPECIAL model (as illustrated) with heavy contacts back and front, lacquered brass, wood base 20/-

AUDIO OSCILLATORS include :—

MODEL O.A.1. For private use. This drives one or two pairs of phones—gives 1,000 cycle note and is operated entirely from A.C. mains. The cost including two valves is £2/5/6

MODEL O.A.2. Produced for class training, it has alternative outputs for 20 or 50 pairs of high resistance headphones, or two loudspeakers. The NOTE is variable in pitch and volume. Entirely A.C. mains operated. Supplied complete for £7/10/0

HEADPHONES. All popular makes including Brownes "A" adjustable reed, at 57/6 available from stock. Special light-weight headphones for training purposes manufactured specially for Webb's, by S. G. Brown 17/6

WEBB'S RADIO

Phone : GERRARD 2089

14 SOHO STREET, LONDON, W.1.

Photo supplied by Fred Knight, G4GAN

The rear cover of 'Radio Simply Explained' in the late 1930s which advertises Webb's Morse training equipment